

## CHECKLIST ENVIRONMENTAL ASSESSMENT

**Project Name:** Proposed Global Geophysical Services, Shotgun 2D Seismic Project, Permit #1577  
**Proposed Implementation Date:** Spring/Summer 2012  
**Proponent:** Global Geophysical Services, C/O Tiffany Schleve,  
13297 South Gessner Road, Missouri City, TX 77489  
**Location:** See below list of tracts  
**County:** Roosevelt County  
**Trust:** Common Schools (CS).

### I. TYPE AND PURPOSE OF ACTION

Global Geophysical Services has requested a seismic permit to explore for natural gas and/or oil deposits on the tracts (listed below) of State Land in Roosevelt County Montana. The 3D seismic proposal will use vibe trucks (vibrosis) to generate source energy.

#### SHOTGUN 2D SEISMIC PROJECT

Township	Range	Section	Portion	State Surface	Private Surface	State Oil&Gas	Private Oil&Gas	Trust
29N	57E	36	W2, NW4NE4	200.00	160.00	360.00	0.00	CS
30N	57E	16	ALL	160.00	480.00	640.00	0.00	CS
30N	57E	36	ALL	160.00	480.00	640.00	0.00	CS
<b>TOTALS</b>				<b>520.00</b>	<b>1,120.00</b>	<b>1,640.00</b>	<b>0.00</b>	<b>CS</b>

### II. PROJECT DEVELOPMENT

#### 1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

*Provide a brief chronology of the scoping and ongoing involvement for this project.*

Global Geophysical Services, C/O Tiffany Schleve - Proponent  
DNRC-Surface and Mineral Owner  
Montana Board of Oil and Gas Conservation  
Robert Rudolph-Surface Lessee  
Terry Overland-Surface Lessee  
Jim Clark-Surface Lessee, (Surface will not be impacted)  
G3 Energy, LLC-Oil and Gas Lessee  
Stewart Geological, Inc.-Oil and Gas Lessee

#### 2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

The DNRC Trust Land Management Division and Minerals Management Bureau have jurisdiction over this proposed project on State surface and mineral ownership. A County permit and proof of qualification to conduct business in the State of Montana will also be required.

DNRC is not aware of any other agencies with jurisdiction or other permits needed to complete this project

---

### 3. ALTERNATIVES CONSIDERED:

Alternative A (No Action) – Deny Global Geophysical Services permission to conduct the 2D seismic survey.

Alternative B (the Proposed action) –Grant Global Geophysical Services permission to conduct the 2D seismic survey using the Glasgow Unit Office’s recommendations to minimize adverse environmental impacts.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT
<ul style="list-style-type: none"><li>• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i></li><li>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i></li><li>• <i>Enter “NONE” If no impacts are identified or the resource is not present.</i></li></ul>

---

### 4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

*Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.*

The soils within the proposed project areas are silty, sandy, clays, and thin hilly. The terrain of the Shotgun 2D project is mostly rolling hills consisting of native rangeland and agricultural land. The proposed action may cause localized areas of soil erosion and compaction from the manipulation of vehicles and equipment on the surface. The proposed seismic project work may only be done when the topsoil is dry or frozen to minimize soil erosion and compaction. The proposed action will temporarily disturb a small portion of the landscape. Any impacts to the soil are expected to be minor, and temporary.

Standard Special Stipulations including no vehicle operation during wet or muddy conditions, no seismic testing on slopes greater than 25%, and no seismic testing in wet zones, which will minimize any impacts.

No cumulative effects to the soils are anticipated.

---

### 5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

*Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.*

There are numerous documented and/or recorded water rights associated with the proposed project areas. The proponent will be required by the Standard Special Stipulations to stay 300 feet from springs, water wells, streams, lakes, or water storage reservoir facilities while conducting vibratory operations. No drilling or blasting operations are planned for this project. Numerous brushy coulees cut the tracts in the proposed project area. Standard Special Stipulations requires no seismic activity within 100 feet of woody draws. This requirement will limit the damage to these areas.

No important surface or groundwater resources will be impacted by the proposed project by utilizing the above Standard Special Stipulations.

Other water quality and/or quantity issues will not be impacted by the proposed action.

---

### 6. AIR QUALITY:

*What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.*

The proposed seismic project will not consist of any disturbance to soils, so no cumulative effects to air quality are anticipated.

---

## **7. VEGETATION COVER, QUANTITY AND QUALITY:**

*What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.*

The vegetation within the proposed project area consists primarily of native rangeland grasses, forbs, and shrubs and agricultural land used for small grain production. Woody draws and riparian areas will be avoided. The vegetation along the proposed seismic routes will be minimally impacted. Restricting the vibroseis and vehicle activity to only frozen and/or dry conditions will minimize any impacts to the vegetation. Vehicle traffic will flatten some standing, native and tame vegetation. Compacted (trampled) vegetation is expected to recover quickly and naturally.

A review of Natural Heritage data through the NRIS was conducted for T29N, R57E: There were no plant species of concern noted or potential species of concern noted.

A review of Natural Heritage data through the NRIS was conducted for T30N, R57E: There were no plant species of concern noted or potential species of concern noted.

---

## **8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:**

*Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.*

The areas are not considered critical wildlife habitat. However, these tracts provide habitat for a variety of big game species (mule deer, whitetail deer, and pronghorn antelope), predators (coyote, fox, and badger), upland game birds (ring neck pheasant, sharp tail grouse, Hungarian partridge), other non-game mammals, raptors and various songbirds. The proposal does not include any land use change which would yield changes to the wildlife habitat. The proposed action will not impact wildlife forage, cover, or traveling corridors. Nor will this action change the juxtaposition of wildlife forage, water, or hiding and thermal cover. Wildlife usage is expected to return to "normal" (pre-action usage) following the seismic operations. Physical ground disturbing activities are not planned. The proposed action will not have long-term negative effects on existing wildlife species and/or wildlife habitat.

Comments were received from MTFWP suggesting the addition of restrictions for songbirds, habitat, and riparian corridors. The recommended restrictions were not based on individual site characteristics and reflect general guidance for all oil and gas development in an effort to mitigate anticipated impacts to wildlife and plant species. Recommended restrictions include, but are not limited to, timing restrictions, corridor restrictions, and avoidance. DNRC will site specifically implement these recommendations when appropriate considering the local resources affected.

---

## **9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:**

*Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.*

There are no threatened or endangered species, sensitive habitat types, or other species of special concern associated with the proposed project area. At this time, no known unique, endangered, fragile or limited environmental resources have been identified within the proposed project area. Physical ground disturbing activities are not planned.

A review of Natural Heritage data through the NRIS was conducted for T29N, R57E. There were four animal species of concern and two potential species of concern noted on the NRIS survey: Birds-Baird's Sparrow and Whooping Crane. Fish-Iowa Darter, Pearl Dace, and Brook Stickleback. Invertebrates-Familiar Bluet. This particular tract of grazing land does not contain many, if any of these species. If any are present, they will be dispersed into the surrounding permanent cover and return to the project area once it is completed.

A review of Natural Heritage data through the NRIS was conducted for T30N, R57E. There were four animal species of concern and two potential species of concern noted on the NRIS survey: Birds-Sprague's Pipit, Burrowing Owl, Ferruginous Hawk, Whooping Crane, and Eastern Screech-Owl. Fish-Brook Stickleback. These

particular tracts of agricultural and grazing land do not contain many, if any of these species. If any are present, they will be dispersed into the surrounding permanent cover and return to the project area once it is completed.

---

#### **10. HISTORICAL AND ARCHAEOLOGICAL SITES:**

*Identify and determine effects to historical, archaeological or paleontological resources.*

A review of previous field evaluations as well as on site inspections indicated the presence of stone circles on Section 36, T29N. This type of seismic activity has very low impacts to historical, archaeological, and paleontological resources. The DNRC archaeologist, Patrick Rennie, has been informed of seismic surveys occurring throughout this region and does not have any cultural resource concerns with this type of seismic exploration as long as the operations are restricted to dry or frozen soil conditions.

The proponent will be required by the Standard Special Stipulations to avoid and report any historical, archeological, and paleontological resources encountered in the project area as well to conduct seismic activities only during dry and frozen conditions.

---

#### **11. AESTHETICS:**

*Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.*

During seismic operations, a variety of vehicles, including ATVS, pickups, buggies, and large vibroseis trucks will be seen and possibly heard by people in the vicinity of the operations. The survey vehicles and equipment will only be visible during the seismic operation and therefore no long term affects to the aesthetics of this area will occur.

The state land does not provide any unique scenic qualities not also provided on adjacent private lands. The proposed activity will be conducted in a remote area, so there would be no change to the aesthetics in either alternative.

No direct or cumulative effects to aesthetics are anticipated.

---

#### **12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:**

*Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.*

The demand on environmental resources such as land, water, air, or energy will not be affected by the proposed action. The proposed action will not consume resources that are limited in the area. There are no other projects in the area that will affect the proposed project.

---

#### **13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:**

*List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.*

There are no other projects or plans being considered on the tracts listed on this EA.

---

### **IV. IMPACTS ON THE HUMAN POPULATION**

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

#### **14. HUMAN HEALTH AND SAFETY:**

*Identify any health and safety risks posed by the project.*

There will be some health and safety concerns associated with the operation of heavy seismic equipment in remote areas during the spring. The proponent and their employees are aware of any health and safety hazards and accept them as occupational hazards.

Once the survey has been completed, there will be no health and safety concerns associated with this project.

---

**15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:**

*Identify how the project would add to or alter these activities.*

The local economy (motels, restaurants, etc.) will benefit from this project. This project will not add to or deter from other industrial, agricultural, or commercial activities in this area.

This proposed oil and gas exploration project could lead to increased oil and gas drilling activity in the area. There is a potential for increased industrial activity associated with oil and gas production in this area.

---

**16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:**

*Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.*

The proposed activity will create a limited number of jobs. These positions are already held by employees of the proponent. No new jobs will be created.

No cumulative effects to the employment market are anticipated.

---

**17. LOCAL AND STATE TAX BASE AND TAX REVENUES:**

*Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.*

This seismic project will temporarily increase the tax base or tax revenues through payroll taxes and vehicle registrations.

There are no other direct or cumulative effects to taxes or revenue for the proposed project.

---

**18. DEMAND FOR GOVERNMENT SERVICES:**

*Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services*

There will be a temporary increase in local traffic if this project is approved, but the traffic levels will return to normal, "pre-action", levels once the project is completed.

There will be no direct or cumulative effects on government services.

---

**19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:**

*List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.*

The proposed action is in compliance with State and County laws. No other management plans are in effect for the area.

---

**20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:**

*Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.*

The tracts of state land are rural and generally have low recreational value. The majority of the tracts are legally accessible and the proposed action is not expected to impact general recreational and wilderness activities on the state tracts.

---

**21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:**

*Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing*

The proposal does not include any changes to housing or developments.

No direct or cumulative effects to population or housing are anticipated.

---

**22. SOCIAL STRUCTURES AND MORES:**

*Identify potential disruption of native or traditional lifestyles or communities.*

There are no native, unique or traditional lifestyles or communities in the vicinity that would be impacted by the proposal.

---

**23. CULTURAL UNIQUENESS AND DIVERSITY:**

*How would the action affect any unique quality of the area?*

The proposed action will not impact the cultural uniqueness or diversity of the area.

---

**24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:**

*Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.*

The Shotgun 2D project will traverse 1,640.00 Common Schools Trust mineral acres. The Settlement of Damages will return not return any revenue to the Common Schools Trust as seismic activity is covered under the minerals lease. The portion of state surface in the SE4, Section 36, T30N, R57E will not be crossed by the Shotgun 2D project and does not require a settlement of damages. There is also potential for the proposed project to locate extractable gas and/or oil resources on state land.

The development of gas and oil resources would generate additional revenue to the trusts.

<b>EA Checklist Prepared By:</b>	<b>Name:</b> Tony Nickol	<b>Date:</b> May 29, 2012
	<b>Title:</b> Land Use Specialist, Conrad Unit, Central Land Office	

## V. FINDING

### 25. ALTERNATIVE SELECTED:

Alternative B (the Proposed action) – Alternative B (the Proposed action) –Grant Global Geophysical Services permission to conduct the 2D seismic survey using the Glasgow Unit Office's recommendations to minimize adverse environmental impacts.

### 26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Significant impacts are not anticipated to occur as a result of issuing this seismic permit. This project is located within the Bakken oil field development area. Seismic testing practices in this area are common well established practices which have demonstrated to result in little long term impact. There are no critical or unique habitats within the project area and stipulations within the seismic permit and on attachment "A" will address immediate resource concerns.

### 27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

☐

EIS

☐

More Detailed EA

☒

No Further Analysis

<b>EA Checklist Approved By:</b>	<b>Name:</b>	R. Hoyt Richards
	<b>Title:</b>	Glasgow Unit Manager
<b>Signature:</b>		/s/
		<b>Date:</b> 7/14/2012



**Legend**

- Line Numbers
- + Surface Location
- Bottom Hole Location
- Receiver Point
- Source Point

## Shotgun 2D

Surface Map

1 inch = 3,009 feet

